<110>   The University of Queensland

<120>   Novel omega conotoxin peptides

<130>   2338740/MJC

<140>   US 09/679,490
<141>   1999-04-16

<150>   PCT/AU99/00288
<151>   1999-04-16

<160>   44

<170>   PatentIn version 3.0

<210>   1
<211>   6
<212>   PRT
<213>   conus catus

<400>   1

Ser Gly Thr Val Gly Arg
1   5

<210>   2
<211>   6
<212>   PRT
<213>   conus catus

<400>   2

Ser Lys Leu Met Tyr Asp
1   5

<210>   3
<211>   6
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A modified version of the second
        loop of CVID

<400>   3

Ser Arg Leu Met Tyr Asp
1   5

<210>   4
<211>   6
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A modified version of the second
        loop of CVID

<400>   4

Asp Arg Leu Met Tyr Asp
1   5

<210>   5
<211>   27
<212>   PRT
<213>   conus catus

<400>   5

Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20   25

<210>   6
<211>   27
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A modified form of CVID

<400>   6

Cys Lys Ser Lys Gly Ala Lys Cys Ser Arg Leu Met Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20   25

<210>   7
<211>   27
<212>   PRT
<213>   Artificial Sequence

<220>

2

<223> Description of Artificial Sequence: A modified form of CVID

<400> 7

Cys Lys Ser Lys Gly Ala Lys Cys Asp Arg Leu Met Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20   25

<210>   8
<211>   25
<212>   PRT
<213>   conus magus

<400>   8

Cys Lys Gly Lys Gly Ala Lys Cys Ser Arg Leu Met Tyr Asp Cys Cys
1   5   10   15

Thr Gly Ser Cys Arg Ser Gly Lys Cys
            20   25

<210>   9
<211>   26
<212>   PRT
<213>   conus magus

<400>   9

Cys Lys Gly Lys Gly Ala Pro Cys Arg Lys Thr Met Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Gly Arg Arg Gly Lys Cys
            20   25

<210>   10
<211>   27
<212>   PRT
<213>   conus geographus

<220>
<221>   misc_feature
<223>   Pro at positions 4, 10 and 21 is 4-Hyp

<400>   10

Cys Lys Ser Pro Gly Ser Ser Cys Ser Pro Thr Ser Tyr Asn Cys Cys
1   5   10   15

Arg Ser Cys Asn Pro Tyr Thr Lys Arg Cys Tyr
            20   25

<210>   11
<211>   18

<212> DNA
<213> conus catus

<400> 11

agcggcaccg taggtaga   18

<210> 12
<211> 382
<212> DNA
<213> conus catus

<220>
<221> CDS
<222> (10)..(228)

<400> 12

atcatcaaa atg aaa ctg acg tgt gtg gtg atc gtc gcc gtg ctg ctc ctg   51
          Met Lys Leu Thr Cys Val Val Ile Val Ala Val Leu Leu Leu
          1   5   10

acg gcc tgt caa ctc atc aca gct aat gac tcc aga ggt acg cag aag   99
Thr Ala Cys Gln Leu Ile Thr Ala Asn Asp Ser Arg Gly Thr Gln Lys
15   20   25   30

cat cgt gcc ctg agg tcg gac acc aaa ctc tcc atg tcg act cgc tgc   147
His Arg Ala Leu Arg Ser Asp Thr Lys Leu Ser Met Ser Thr Arg Cys
                35   40   45

aag agt aaa gga gca aaa tgt tca aag ctt atg tat gac tgc tgc agc   195
Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys Cys Ser
                50   55   60

ggt tct tgc agc ggc acc gta ggt aga tgt ggc tgatccggcg cttgatctcc   248
Gly Ser Cys Ser Gly Thr Val Gly Arg Cys Gly
                65   70

cccttctgtg ctctatcctt ttctgcctga gtcctcctta cctgagagtg gtcatgaacc   308

actcatcacc taccccctgg aggtctcaaa gaactacttg aaataaagcc gcttgcaaaa   368

aaaaaaaaaa aaaa   382

<210> 13
<211> 73
<212> PRT
<213> conus catus

<400> 13

Met Lys Leu Thr Cys Val Val Ile Val Ala Val Leu Leu Leu Thr Ala
1   5   10   15

4

```
Cys Gln Leu Ile Thr Ala Asn Asp Ser Arg Gly Thr Gln Lys His Arg
            20              25              30


Ala Leu Arg Ser Asp Thr Lys Leu Ser Met Ser Thr Arg Cys Lys Ser
            35              40              45


Lys Gly Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys Cys Ser Gly Ser
        50              55              60


Cys Ser Gly Thr Val Gly Arg Cys Gly
65                  70


<210>   14
<211>   27
<212>   PRT
<213>   conus catus


<400>   14

Cys Arg Ser Lys Gly Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys Cys
1               5               10              15
Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20              25

<210>   15
<211>   27
<212>   PRT
<213>   conus catus


<400>   15

Cys Lys Ser Lys Gly Ala Arg Cys Ser Lys Leu Met Tyr Asp Cys Cys
1               5               10              15
Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20              25

<210>   16
<211>   27
<212>   PRT
<213>   conus catus


<400>   16

Cys Lys Ser Lys Gly Ala Gln Cys Ser Lys Leu Met Tyr Asp Cys Cys
1               5               10              15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20              25
```

<210> 17
<211> 27
<212> PRT
<213> conus catus

<400> 17

Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Ser Gly Ala Val Gly Arg Cys
            20   25

<210> 18
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: A derivative of CVID

<400> 18

Cys Lys Ser Lys Gly Ala Lys Cys Asp Lys Leu Met Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20   25

<210> 19
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: A derivative of CVID

<400> 19

Cys Lys Tyr Lys Gly Ala Lys Cys Ser Arg Leu Met Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20   25

<210> 20
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: A derivative of CVID

<400> 20

Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Ala Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
             20   25

<210> 21
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: A derivative of CVID

<400> 21

Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys Cys
1   5   10   15

Thr Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
             20   25

<210> 22
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: A derivative of CVID

<220>
<221> misc_feature
<222> (5)
<223> Xaa at position 5 is D-alanine

<400> 22

Cys Lys Ser Lys Xaa Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
             20   25

<210> 23
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: A derivative of CVID

<400> 23

Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys Cys
1   5   10   15

```
Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys Tyr
          20                      25


<210>   24
<211>   27
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A derivative of CVID


<400>   24
Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys Cys
1               5                   10                      15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
          20                      25


<210>   25
<211>   28
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A derivative of CVID


<400>   25

Tyr Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys
1               5                   10                      15

Cys Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
          20                      25


<210>   26
<211>   27
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A derivative of CVID


<220>
<221>   misc_feature
<223>   Cysteine at position 1 is acylated

<400>   26

Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys Cys
1               5                   10                      15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
          20                      25


<210>   27
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<211>   27
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A derivative of CVID

<220>
<221>   misc_feature
<222>   (12)
<223>   Leu at position 12 is L-norleucine

<400>   27

Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Leu Tyr Asp Cys Cys
1               5                   10                  15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20                  25

<210>   28
<211>   27
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A derivative of CVID

<220>
<221>   misc_feature
<222>   (12)
<223>   Leu at position 12 is L-norleucine

<400>   28

Cys Lys Ser Lys Gly Ala Lys Cys Ser Arg Leu Leu Tyr Asp Cys Cys
1               5                   10                  15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20                  25

<210>   29
<211>   27
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A derivative of CVID

<220>
<221>   misc_feature
<222>   (12)
<223>   Leu at position 12 is L-norleucine

<400>   29

Cys Lys Tyr Lys Gly Ala Lys Cys Ser Arg Leu Leu Tyr Asp Cys Cys
1               5                   10                  15
```

9

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20   25

<210>   30
<211>   27
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A derivative of CVID

<220>
<221>   misc_feature
<222>   (12)
<223>   Xaa at position 12 is L-O-methyl homoserine

<400>   30

Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Xaa Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20   25

<210>   31
<211>   27
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A derivative of CVID

<220>
<221>   misc_feature
<222>   (12)
<223>   Methionine residue at position 12 is oxidised to its sulfoxide

<400>   31

Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Xaa Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
            20   25

<210>   32
<211>   27
<212>   PRT
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: A derivative of CVID

<400>   32

Cys Lys Ser Lys Gly Ala Lys Cys Ser Lys Leu Met Tyr Asp Cys Cys
1   5   10   15

Ser Gly Ser Cys Ser Gly Thr Val Gly Arg Cys
          20   25

<210> 33
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: A modified version of the second loop
      of CVID

<400> 33

Asp Lys Leu Met Tyr Asp
1   5

<210> 34
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: A modified version of the second loop
      of CVID

<400> 34

Ser Lys Leu Ala Tyr Asp
1   5

<210> 35
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: A modified version of the second loop
      of CVID

<220>
<221> misc_feature
<223> Leu at position 4 is L-norleucine

<400> 35

Ser Lys Leu Leu Tyr Asp
1   5

<210> 36
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: A modified version of the second loop
      of CVID

11

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<220>
<221>  misc_feature
<223>  Leu at position 4 is L-norleucine

<400>  36

Ser Arg Leu Leu Tyr Asp
1               5


<210>  37
<211>  6
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: A modified version of the second loop
       of CVID

<220>
<221>  misc_feature
<222>  (4)
<223>  Xaa at position 4 is L-O-methyl homoserine

<400>  37

Ser Lys Leu Xaa Tyr Asp
1               5


<210>  38
<211>  6
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: A modified version of the second loop
       of CVID

<220>
<221>  misc_feature
<222>  (4)
<223>  Xaa at position 4 is L-O-methyl serine

<400>  38

Ser Lys Leu Xaa Tyr Asp
1               5


<210>  39
<211>  26
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Description of Artificial Sequence: primer

<220>
<221>  misc_feature
<222>  (2)..(4)
<223>  Xaa may be any other amino acid and up to one Xaa may be a
```

12

deletion

<220>
<221> misc_feature
<222> (6)..(7)
<223> Xaa may be any other amino acid and up to one Xaa may be a
       deletion

<220>
<221> misc_feature
<222> (9)
<223> Xaa may be any other amino acid and up to one Xaa may be a
       deletion

<220>
<221> misc_feature
<222> (12)
<223> Xaa may be any other amino acid and up to one Xaa may be a
       deletion

<220>
<221> misc_feature
<222> (14)
<223> Xaa may be any other amino acid and up to one Xaa may be a
       deletion

<220>
<221> misc_feature
<222> (17)
<223> Xaa may be any other amino acid and up to one Xaa may be a
       deletion

<220>
<221> misc_feature
<222> (22)
<223> Xaa may be any other amino acid and up to one Xaa may be a
       deletion

<400> 39

Cys Xaa Xaa Xaa Gly Xaa Xaa Cys Xaa Lys Leu Xaa Tyr Xaa Cys Cys
1   5   10   15

Xaa Ser Cys Ser Gly Xaa Val Gly Arg Cys
            20   25

<210> 40
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 40
aactggaaga attcgcggcc gcaggaat   28

<210> 41
<211> 23

13

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<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: primer

<400>   41
atcatcaaaa tgaaactgac gtc                                              23

<210>   42
<211>   28
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: primer

<400>   42
aactggaaga attcgcggcc gcaggaat                                         28

<210>   43
<211>   27
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: primer

<400>   43
atcaaaatga aactgacgtg tgtggtg                                          27

<210>   44
<211>   26
<212>   DNA
<213>   Artificial Sequence

<220>
<223>   Description of Artificial Sequence: primer

<400>   44
gcgttttgat cagccacatc taccta                                           26
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